

REMARKS

The present application was filed on February 11, 2000 with claims 1-47. Claims 40-47 were canceled in an amendment dated August 7, 2003. Claims 1-39 are currently pending in the application, with claims 1 and 35-39 being the independent claims.

Formal drawings were filed in the present application on August 7, 2003. The Examiner has failed to acknowledge these formal drawings in the final Office Action. Applicants respectfully request approval and entry of the formal drawings.

Applicants submit herewith a Supplemental Information Disclosure Statement, and respectfully request consideration and entry of said Statement.

Applicants have amended dependent claim 10 to correct a minor typographical error.

Applicants have also made minor amendments to dependent claims 23 and 27.

Applicants respectfully request reconsideration of the present application in view of the remarks below.

Claims 1, 8, 9, 11-13, 18 and 35-39 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 5,970,047 (hereinafter "Suzuki"). Applicants respectfully traverse the §102(e) rejection.

Applicants initially note that the Manual of Patent Examining Procedure (MPEP), Eight Edition, August 2001, §2131, specifies that a given claim is anticipated "only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference," citing Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, MPEP §2131 indicates that the cited reference must show the "identical invention . . . in as complete detail as is contained in the . . . claim," citing Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). For the reasons identified below, Applicants submit that the Examiner has failed to establish anticipation of at least independent claims 1 and 35-39 by the Suzuki reference.

Independent claim 1 is directed to a method for use in a wireless communication system. The claim calls for transmitting at least one of an uplink access signal and an uplink timing synchronization signal from a mobile station of the system to a base station of the system. The claim further specifies that the at least one signal is from a signal set which includes a plurality of

orthogonal signals, such that different timing and access signals from the mobile station and at least one other mobile station of the system are received at the base station orthogonal to one another over a base station sample window.

Illustrative examples of such uplink access signal and uplink timing synchronization signals are described in conjunction with FIGS. 1 and 2 of the drawings, and the corresponding text at page 6, line 7, to page 9, line 7, of the specification.

The Examiner in formulating the §102(e) rejection over Suzuki argues that the claimed uplink access signal and uplink timing synchronization signal configurations are disclosed in the U0 to U5 timing arrangement shown in FIGS. 3A-3G of Suzuki, and in the associated text at column 4, lines 39-46. Applicants respectfully disagree. There is no teaching or suggestion in the cited portions of Suzuki regarding the particular limitation in question, that is, an uplink access signal or an uplink timing synchronization signal from a signal set which includes a plurality of orthogonal signals, such that different timing and access signals from the mobile station and at least one other mobile station of the system are received at the base station orthogonal to one another over a base station sample window.

The particular cited portions of the Suzuki reference relied on by the Examiner do not relate to uplink access signals or uplink timing synchronization signals, but instead relate only to uplink and downlink data transmission. Suzuki in fact teaches away from the claimed invention by teaching that the mobile stations synchronize to signals transmitted from the base station during a timing processing period which is clearly described as falling outside of the time slots T or R of FIGS. 3A-3G. This is apparent from column 5, lines 15-30 of Suzuki, which provides the following disclosure, with emphasis supplied:

Each mobile station has an allowance of two time slot period (i.e., 400 μ sec.) from completion of reception and transmission of one time slot period to the next execution of transmission and reception. Each mobile station carries out a timing processing and a processing called a frequency hopping by using the allowance. That is, during about 200 μ sec. before each transmission slot T, the mobile station carries out a timing processing TA in which a transmission timing is synchronized with a timing of a signal transmitted from the

base station side. After about 200 μ sec. when each transmission slot T terminates, a frequency hopping in which a band slot for carrying out signal transmission and reception is changed to another band slot, is carried out. Owing to the frequency hopping, a plurality of band slots prepared in one base station are utilized uniformly by respective mobile stations, for example.

It appears from the above-quoted portion of Suzuki that the Suzuki arrangements utilize a different type of timing synchronization than the claimed invention. There is no particular disclosure in Suzuki regarding an uplink access signal or uplink timing synchronization signal of the type claimed, and Suzuki actually teaches away from the claimed arrangements by teaching synchronization of the mobile stations with a downlink signal transmitted by the base station outside of the particular T or R time slots shown in FIGS. 3A-3G.

The Examiner in the final Office Action at page 10, last paragraph, argues that the claimed uplink timing synchronization signal is met by pilot signals inherently disclosed in Suzuki. More specifically, the Examiner states as follows:

Therefore, it is inherent to Suzuki that in every signal transmitted, from mobile station to base station, there will be uplink timing synchronization signals (pilots).

Applicants respectfully disagree. Applicants initially note that the term “pilot” is apparently not mentioned anywhere in the text of the Suzuki reference, and is certainly not described therein as being utilizable for uplink timing synchronization as alleged. Thus, it appears that the Examiner is relying on teachings that are not present in the Suzuki reference, although the claim at issue is rejected as being anticipated by Suzuki. Moreover, as Applicants described above, Suzuki explicitly teaches an entirely different type of timing synchronization, namely, an arrangement in which mobile stations synchronize to signals transmitted from the base station during a particular timing processing period TA prior to a transmission time slot T. More specifically, Suzuki in column 5, lines 15-30 states that the mobile station “carries out a timing processing TA in which a transmission timing is synchronized with a timing of a signal transmitted from the base station side.” Such a teaching is

directly contrary to the above-quoted inherency argument made by the Examiner. The inherency argument is therefore believed to be improper. The Suzuki reference does not explicitly or inherently disclose the claimed arrangement involving transmission of at least one of an uplink access signal and an uplink timing synchronization signal from a mobile station of the system to a base station of the system, where the at least one signal is from a signal set which includes a plurality of orthogonal signals, such that different timing and access signals from the mobile station and at least one other mobile station of the system are received at the base station orthogonal to one another over a base station sample window.

Since Suzuki fails to meet at least the limitations of claim 1 regarding uplink access signal or uplink timing synchronization signal configuration, claim 1 is not anticipated by Suzuki.

Independent claims 35-39 each include limitations similar to those of claim 1 as described above, and are therefore believed allowable over Suzuki for substantially the same reasons that claim 1 is believed allowable over Suzuki.

Dependent claims 2-34 are believed allowable at least by virtue of their dependence from independent claim 1. Moreover, one or more of these claims are believed to define additional separately-patentable subject matter relative to Suzuki and the other art of record.

Applicants further submit that the additional references cited by the Examiner in conjunction with the §103(a) rejections fail to supplement the above-described fundamental deficiency of Suzuki as applied to claim 1. The §103(a) rejections are therefore believed to be improper and should be withdrawn.

Applicants also note that the Examiner has failed to demonstrate the requisite motivation for combining the references or modifying their teachings to reach the limitations in question.

The Federal Circuit has stated that when patentability turns on the question of obviousness, the obviousness determination “must be based on objective evidence of record” and that “this precedent has been reinforced in myriad decisions, and cannot be dispensed with.” In re Sang-Su Lee, 277 F.3d 1338, 1343 (Fed. Cir. 2002). Moreover, the Federal Circuit has stated that “conclusory statements” by an examiner fail to adequately address the factual question of motivation, which is material to patentability and cannot be resolved “on subjective belief and unknown authority.” Id. at 1343-1344. There has been no showing in the present §103(a) rejections of

objective evidence of record that would motivate one skilled in the art to combine Suzuki with each of the cited references, or to modify the proposed combinations to produce the particular limitations in question. For example, with regard to the combination of Suzuki with U.S. Patent No. 6,546,055 (hereinafter "Schmidl"), the Examiner states as follows at page 5, paragraphs 2-3, of the Office Action, with emphasis supplied:

Therefore at the time the invention was made it would have been obvious to one of ordinary skill in the art to have combined the invention as disclosed by Schmidl, and the invention as disclosed by Suzuki.

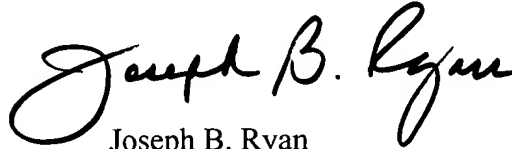
One of ordinary skill in the art would have been motivated to do this in order to perform the combined process of managing multiple signals while maximizing the speed and processing of the signals and minimizing the interference and probable errors.

The above-quoted statement of obviousness provided by the Examiner is precisely the type of subjective, conclusory statement that the Federal Circuit has indicated provides insufficient support for an obviousness rejection. The alleged motivation provided is nothing more than recitation of a potential advantage that may be associated with the claimed arrangements, and does not constitute the required objective evidence of record. The absence of any such objective evidence instead suggests that the Examiner has simply undertaken a piecemeal reconstruction of the claimed invention, given the benefit of access to the disclosure provided by Applicants. The statements of obviousness provided by the Examiner at page 6, paragraphs 2-3, page 7, paragraphs 3-4, page 8, paragraphs 3-4, and page 9, paragraph 2, are similarly deficient.

In view of the above, Applicants believe that claims 1-39 are in condition for allowance, and respectfully request the withdrawal of the §102(e) and §103(a) rejections.

As indicated previously, a Notice of Appeal is submitted concurrently herewith.

Respectfully submitted,

A handwritten signature in black ink that reads "Joseph B. Ryan". The signature is written in a cursive style with a large, looping initial "J".

Date: February 2, 2004

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Enclosure(s): Notice of Appeal